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Chapter 6.~~Surveillance and~~ Monitoring and Assessment

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I. INTRODUCTION

The effectiveness of a water quality control program cannot be judged without the information supplied by a comprehensive and systematic surveillance ~~and~~, monitoring, and assessment program. This chapter describes statewide and regional monitoring and assessment programs designed to provide scientific information on water quality in the Central Coast Region. The Regional Board uses information

produced by these programs to satisfy requirements of both the federal Clean Water Act (<http://www.swrcb.ca.gov/rwqcb3/>) and applicable portions of the state's Porter-Cologne Water Quality Control Act.

Historically, a wide variety of interested State, federal, and local agencies have sampled, analyzed, and tracked water quality. The State Board monitoring program coordinates existing

~~information, gathering and supplementing it where necessary to meet data needs.~~

~~The State Board is the lead agency in California directing surveillance and monitoring of water quality. A routine program of systematic sampling of the State's waters is now in existence. The activity is coordinated through and assisted by the California Department of Water Resources (DWR) and Health Services (DOHS) as well as the United States Geologic Survey (USGS) and the Environmental Protection Agency (EPA).~~

~~This chapter contains a discussion of the objectives and various elements of the State and Regional Boards' programs.~~

Monitoring information is presented for both regulatory and ambient monitoring programs at the State and Regional level. Regulatory monitoring programs address compliance issues related to discharges to waters of the State. Ambient monitoring programs address overall quality of waters of the State, generally without regard to specific dischargers.

~~II. PROGRAM~~ OBJECTIVES

~~The overall~~General objectives ~~of an adequate surveillance and of statewide and regional monitoring~~ and assessment programs are:

1. To measure the achievement of water quality goals and objectives specified in this plan.
2. To measure specific effects of water quality changes on ~~the~~ established beneficial uses.
3. To measure background conditions of water quality and long-term trends in water quality.
4. To locate and identify sources of water pollution that pose an acute, ~~ae~~cumulative, and/or chronic threat to the environment.
5. To provide information needed to correlate receiving water quality to mass emissions of pollutants by waste dischargers.
6. To provide data for determining waste discharger compliance with permit conditions.

7. To measure waste loads discharged to receiving waters and to identify the limits of their effect, and in water quality limited segments to, prepare waste load allocations necessary to achieve water quality control.
8. To provide documentation necessary to support enforcement of permit conditions and waste discharge requirements.
9. To provide data needed to carry on the continuing planning process.
10. To measure the effects of water rights decisions on water quality and to guide the State Board in its responsibility to regulate unappropriated water for the control of quality.
11. To provide a clearinghouse for the collection and dissemination of water quality data gathered by other agencies and private parties cooperating in the program.
12. To prepare reports on water quality conditions as required by federal and State regulations and other users requesting water quality data.

~~III. QUALITY~~ CONTROL ~~AND DATA~~ MANAGEMENT

Federal regulations and State policy require the preparation and implementation of Quality Assurance/Quality Control Plans for most monitoring carried out by the Regional Board's staff or its contractors. Dischargers must use a laboratory~~ies~~ approved by the Regional Board's Executive Officer and/or Regional Board's laboratory. The laboratory must have an approved Quality Assurance/Quality Control program. Most Regional Board monitoring activities are conducted under the Quality Assurance Program Plan developed for the Surface Water Ambient Monitoring Program (SWAMP).

~~Discharger monitoring reports are kept in the Regional Board's files; older files are microfiche. The Board has increasingly sophisticated computer facilities for analysis of data collected in special studies. "Raw" data are periodically made available to the State Board for entry into the statewide Water~~

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~~Quality Information System database for use by other agencies.~~

~~The results of special studies are generally summarized in the Regional Board staff reports and are discussed at public meetings of the Regional Board. The results of complaint monitoring are provided to the person or agency submitting the complaint. Copies of the Regional Board planning documents and special studies reports are provided to public and university libraries.~~

~~III. STATE WATER RESOURCES CONTROL BOARD PROGRAM TASKS IV. REGULATORY MONITORING AND ASSESSMENT~~

IV.A. COMPLIANCE MONITORING

A significant component of the State's regulatory monitoring relates specifically to discharges of pollutants from known sources. All entities holding Regional Board Discharge Orders must conduct regular sampling and analysis of waste released to surface and ground waters. The specific chemical and physical parameters to monitor, types of sampling and analyses (e.g., waste stream sampling, toxicity tests, etc.), frequency, and other specific requirements are determined on a case-by-case basis according to the nature of the discharge and potential environmental effects. Each Order issued by the Regional Board describes the specific compliance monitoring requirements for that Order holder. Monitoring data collected by point source dischargers and nonpoint pollution control programs are used to:

- Determine compliance with and provide documentation to support enforcement of Order conditions;
- Provide information needed to relate receiving water quality to mass emission of pollutants by dischargers.

Discharger self-monitoring reports, generated as a result of an Order and/or Waste Discharge Requirements, are collected and reviewed by Regional Board staff for compliance. Any necessary enforcement actions are the responsibility of, and are carried out by, the Regional Board. Self-monitoring reports are normally submitted by the discharger on a regular basis (monthly, quarterly, or semi-annually) as specified by the Order conditions.

Compliance monitoring includes a control procedure whereby Regional Board personnel periodically visit each discharger on both an announced and unannounced "Facility Inspection" basis. The intent of announced visits is to work with the discharger to review his procedures in order to assure quality control. The intent of the unannounced inspections is to survey the operation, inspect the discharge area, and collect, check, or reference samples. Data from self-monitoring may also be supplemented with information obtained by Regional Board staff through special studies, such as those characterizing the variability of the discharge, pollutant levels in nearby receiving water and biota, and characterization of pollutant loads attributable to urban runoff.

IV.B. COMPLAINT INVESTIGATION

Complaint Monitoring involves investigation of complaints of citizens and public or governmental agencies on the discharge of pollutants or creation of nuisance conditions. It is the responsibility of the Regional Board to address the complaint, including preparation of reports, letters, or other follow-up actions, to document the observed conditions, and to inform the State Board, complainant, and discharger of the observed conditions.

IV.C. AERIAL SURVEILLANCE

Aerial surveillance is used primarily to gather photographic records of discharges, water quality conditions, and conditions at solid waste disposal sites in the Region. Aerial surveillance is particularly effective because of the overall view of a facility that is obtained and because many facilities can be observed in a short period of time.

V. AMBIENT MONITORING AND ASSESSMENT

III.AV.A. STATE-WIDE SURFACE WATER MONITORING PROGRAMS

Section 13160 of the Porter-Cologne Water Quality Control Act delegates primary responsibility for coordination and control of water quality in California to the State Board. Section 13163 of the Act states that in conducting this mission, the State Board is to coordinate water quality investigations, recognizing that other State agencies may have primary statutory responsibility for such investigations.

Pursuant to these mandates, the State Board ~~developed and in April 1976 established a coordinated Primary Water Quality Monitoring Network for California~~ has established multiple water quality monitoring programs for California. Other participants in these programs include ~~Participants in the Coordinated Network included the~~ California Departments of Health Services (DHS), California Department of Water Resources (DWR), ~~and California Department of Fish and Game (DFG), and the United States Department of the Interior,~~ Federal Bureau of Reclamation; ~~the U.S. United States Geological Survey (USGS); and, the United States Environmental Protection Agency (USEPA).~~

V.A.1. SURFACE WATER AMBIENT MONITORING PROGRAM

The Porter-Cologne Water Quality Control Act and the federal Clean Water Act (CWA) direct water quality programs to implement efforts intended to

protect and restore the integrity of waters of the State. Ambient monitoring is independent of regulatory water quality programs and serves as a measure of the overall quality of water resources and the overall effectiveness of RWQCB's prevention, regulatory, and remedial actions.

The Surface Water Ambient Monitoring Program (SWAMP) is designed as an ongoing program to assess the effectiveness of SWRCB and RWQCB regulatory water quality programs, to develop a statewide picture of the status and trends in surface water quality, and to develop site-specific information in areas that are known or suspected to have water quality problems. In particular, SWAMP is intended to meet four goals:

1. Identify specific problems preventing the SWRCB, RWQCBs, and the public from realizing beneficial uses in targeted watersheds.
2. Create an ambient monitoring program that addresses all hydrologic units of the state using consistent and objective monitoring, sampling and analysis methods; consistent data quality and assurance protocols; and centralized data management.
3. Document ambient water quality conditions in potentially clean and polluted areas.
4. Provide data to evaluate the effectiveness of water quality regulatory programs in protecting beneficial uses of waters of the State.

In achieving these goals, each of the SWRCB and RWQCBs' existing monitoring programs (e.g. SMW, TSM) are incorporated into SWAMP to ensure a coordinated approach without duplication. Fiscal Year (FY) 00-01 marked the first year of implementation of the SWAMP Program. The Central Coast Ambient Monitoring Program (CCAMP), which has been underway since 1997, represents the Central Coast Region's participation in the statewide SWAMP Program. More detailed information on the SWAMP program can be found at the state board website (<http://www.swrcb.ca.gov>). A summary of the CCAMP program is contained in this chapter.

The goal of the Primary Network is to provide an overall, continuing assessment of water quality in the State. This goal is to be achieved by statewide monitoring of water quality parameters that can affect beneficial uses of State waters. Among such parameters, toxic substances have received

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~~increasing attention in federal and State water pollution control activities; accordingly, Toxic Substances Monitoring and the State Mussel Watch program are included in the Primary Network.~~

III.A.1.V.A.2. TOXIC SUBSTANCE MONITORING PROGRAM

~~One alternative in monitoring for toxic substances (toxic elements and organic compounds) is to collect and analyze water samples. A major problem with this approach is that toxic discharges are likely to occur in an intermittent fashion and are thus likely to be missed with "grab" sampling of the water. Another limitation to analyzing water samples is that, generally, harmful toxicants are present in low concentrations in the water. The process of bioaccumulation acts to concentrate toxicants through the aquatic food web. Therefore, in the Toxic Substances Monitoring Program the flesh of fish and other aquatic organisms is analyzed for toxic metals and synthetic organic compounds.~~

The Toxic Substance Monitoring (TSM) Program was initiated in 1976 by the SWRCB to provide a uniform statewide approach to the detection and evaluation of toxic substances in organisms found in fresh, estuarine, and marine waters of the State. The TSM program uses resident fish and other aquatic organisms (primarily crayfish) to monitor pollutant levels through tissue analysis. Results of tissue analyses reflect exposure to contaminants over extended periods of time and therefore provide a field-based estimate for long-term exposure of people, fish, and other wildlife to pollutants in the food chain. This approach also allows for capture of potentially toxic discharges that occur on an intermittent basis that might otherwise be missed with "grab" sampling of water.

~~The Toxic Substances Monitoring (TSM) portion of the Primary Network has been integrated with other Primary Network Monitoring. Streams and lakes were ranked according to various criteria established to indicate their importance to the State in terms of water quality. From this process, the water bodies ranked Priority 1, or highest priority, were included in the Primary Network; routine chemical and biological water monitoring is performed by DWR and/or the USGS; and toxic substances monitoring of~~

~~resident organisms is performed by the Department of Fish and Game.~~

The primary objectives of the ~~Primary Network~~ TSM program are:

1. To develop statewide baseline data and to demonstrate trends in the occurrence of toxic elements and organic substances in ~~the~~ aquatic biota.
2. To assess impacts of accumulated toxicants upon the usability of State waters by man.
3. To assess impacts of accumulated toxicants upon ~~the~~ aquatic biota.
4. Where problem concentrations of toxicants are detected, to attempt to identify sources of toxicants and to relate concentrations found in the biota to concentrations found in the water.

TSM reports have been published annually since 1977. The samples collected in the TSM program are benthic invertebrates and predator fish. Tissue samples ~~is~~ are analyzed for ~~important~~ metals, including arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc; fish ~~flesh~~ flesh tissue is analyzed for mercury. In addition, both invertebrate and fish ~~flesh tissue~~ flesh tissue samples are analyzed for ~~55~~ synthetic organic compounds, most of which are pesticides (Table ~~6VI-1~~). ~~TSM reports have been published annually since 1977.~~ Both TSM and State Mussel Watch (SMW) Program publications and data can be found at the SWRCB website (<http://www.swrcb.ca.gov>).

III.A.2.V.A.3. STATE MUSSEL WATCH

The State Mussel Watch (SMW) program ~~has been integrated with the Primary Network Monitoring to provide documentation of the quality of coastal marine and estuarine waters. The SMW program fulfills the goal of providing the State with long-term trends in the quality of these waters.~~ is a long-term marine water-quality monitoring program initiated in 1977. The SMW program uses resident and transplanted bivalves (e.g. mussels and clams) to monitor pollutant levels at coastal reference stations

and selected sites in bays and estuaries to identify or confirm potential toxic substance pollution.

Mussels ~~were chosen~~ are used as ~~the~~ a ~~indicator~~ sentinel organism for trace metals and synthetic organic compounds in ~~the~~ coastal and estuarine waters. Although the mussel populations of bays and estuaries are of a different species than those found in the open coast, their suitability as sentinels for monitoring the presence of toxic pollutants stems from several factors including: (1) their ubiquity along the California coast; (2) their ability to concentrate pollutants above ambient sea water levels and to provide a time-averaged sample; and (3) their non-motile nature which permits a localized measurement of water quality.

The primary goals of the SMW program are as follows:

1. To provide long-term monitoring of selected toxic substances in coastal waters;
2. To provide an important element in comprehensive water quality monitoring strategy;
3. To identify on a year-to-year basis specific areas where concentrations of toxic materials are higher than naturally occurring background levels.

~~Tissue samples are analyzed for The trace metals analyzed for in mussel tissues including aluminum, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver and zinc. and for sSynthetic organic compounds analyzed for are summarized~~ listed in Table ~~6VI-1~~. ~~When compared with alternative sampling designs, such as seawater and sediment sampling, SMW is a more cost effective program. Reports have been published annually since 1978.~~

During the 1977 and 1978 sampling periods, the focus of the SMW program was, for the most part, on open coast monitoring of sites outside the vicinity of known pollutant point sources. Monitoring water quality in the State Board's designated Water Quality Protection Areas (formerly known as Areas of Special Biological Significance (ASBS)), to establish baseline conditions relating to the range of typical conditions in water, sediment and biota, was given prime importance in the early years of the program.

Based on identification of "hot spot" areas during 1977 and 1978, intensive sampling of these areas was implemented in 1979. Such a sampling strategy was intended to confirm previous findings, establish the magnitude of the potential problem and identify pollutant sources. The program has since evolved to include transplanting ~~M. californianus~~ mussels into selected California bays and estuaries at specific sites to confirm potential toxic substance pollution, ~~i.e.g., in the vicinity of dischargers.~~ In some cases the SMW program deploys freshwater clams or other organisms into fresh water streams and rivers to learn more about toxic substance pollution in watershed systems.

As with the TSM, statewide SMW reports are published annually, available at the SWRCB website (<http://www.swrcb.ca.gov>).

III.B. LAKE SURVEILLANCE

~~This element is responsive to the requirements set forth in Section 314 of PL 92-500 and applicable federal regulations. The State is required to identify and determine the present trophic condition of all publicly owned fresh water lakes. The lakes inventory is updated on a two-year cycle to include additional data as it becomes available and to indicate changes in trophic conditions.~~

V.A.4. GROUNDWATER AMBIENT MONITORING AND ASSESMENT

The SWRCB, pursuant to provisions of the 1999 Budget Act, has developed a statewide Groundwater Ambient Monitoring and Assessment (GAMA) Program, which includes the collaborative efforts of other state and federal agencies also charged with groundwater monitoring responsibilities. The goal of GAMA is to provide information on the quality of California's groundwater and assess relative susceptibility of groundwater resources in California, especially those used as a drinking water supply. The GAMA program has two primary components: the California Aquifer Susceptibility (CAS) Assessment, which addresses public drinking water wells, and the Voluntary Domestic Well Assessment Project (VDWAP) which addresses private domestic drinking water wells.

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V.A.4.a. CALIFORNIA AQUIFER SUSCEPTIBILITY ASSESSMENT

The SWRCB, in coordination with the DHS, DWR, and local water districts and purveyors, is implementing the California Aquifer Susceptibility (CAS) Assessment to determine water quality and relative susceptibility of groundwater that serves as a source for public water supplies to possible contaminants. CAS employs a groundwater age dating technique (tritium-helium analysis) and low-level detection (microgram/liter range) of volatile organic compounds (VOCs) to assess aquifer susceptibility. A fundamental premise of the CAS assessment is that groundwater age can be used as a guide for assessing aquifer susceptibility, i.e., young groundwater age implies relatively rapid recharge of surface water to the aquifer, and therefore relatively rapid migration of surface contaminants to the aquifer. Low-level VOC detection is used to corroborate age-dating data and to also identify public supply wells that are already impacted by contaminants, but are still below action levels. This provides an “early warning system” for potentially significant VOC contamination.

In coordination with the USGS and Lawrence Livermore National Laboratory (LLNL), the CAS assessment is designed to sample the approximately 16,000 public supply wells statewide, beginning with more urbanized areas. Sampling began in September 2000 and will continue for the next several years over the entire state, depending on the availability of funding. General constituents sampled by the USGS and LLNL for low-level VOC analysis are available at the SWRCB website (<http://www.swrcb.ca.gov>). Additional constituents may be chosen based upon specific site or land-use conditions.

Groundwater quality, age-dating, and hydrogeologic data collected as part of the CAS assessment is managed utilizing the Geographical and Environmental Information Management System (GEIMS)/GeoTracker system, an internet-accessible geographic information system (GIS) that provides access to water quality data. GeoTracker can be found at <http://geotracker.swrcb.ca.gov/>.

V.A.4.b. VOLUNTARY DOMESTIC WELL ASSESSMENT

The Voluntary Domestic Well Assessment Program consists of sampling domestic wells for various constituents that may be found in domestic well water, including nitrates, total and fecal coliform bacteria, Methyl tert-Butyl Ether (MTBE), and various minerals. This information is provided to domestic well owners and groundwater agencies. The Voluntary Domestic Well Assessment Program focuses on specific areas, as resources permit and are chosen based upon existing knowledge of water quality and land use, in coordination with local environmental agencies. The SWRCB incurs the costs of sampling and analysis.

V.A.5. GROUNDWATER QUALITY MONITORING ACT OF 2001

Assembly Bill 599 (AB 599), effective January 1, 2002, established the Groundwater Quality Monitoring Act of 2001 (sections 10780-10782.3 of the California Water Code). The Act requires the SWRCB to integrate existing monitoring programs with new program elements, as necessary, for the purpose of establishing a comprehensive groundwater monitoring program capable of assessing each groundwater basin in the state, either through direct or other statistically reliable sampling approaches. A second fundamental component of this Act is to increase the availability of water quality data and information to the public.

AB 599 requires the SWRCB to create an Interagency Task Force (ITF) to identify actions necessary to establish a groundwater-quality monitoring program, and to identify measures that would increase coordination among agencies that collect groundwater quality information. In addition, the SWRCB is also to convene a Public Advisory Committee (PAC) to the ITF. The AB 599 PAC is to consist of representatives from federal agencies, public water systems, environmental organizations, local water agencies, agriculture, groundwater management entities, and the business community. In coordination with the ITF and the PAC, the SWRCB must submit to the Governor and the

Legislature, on or before March 1, 2003, a report that includes a description of a comprehensive groundwater-quality monitoring program for the State.

V.B. REGIONAL MONITORING PROGRAMS

V.B.1 CENTRAL COAST AMBIENT MONITORING PROGRAM (CCAMP)

In 1998, CCAMP was formally established by the Central Coast Regional Water Quality Control Board (CCRWQCB) to provide integrated and systematic information on surface water quality in the Region, in order to evaluate the effectiveness of Regional Board efforts to meet Basin Plan water quality objectives and protect beneficial uses. CCAMP's general program objectives are to:

- 1) Acquire and evaluate existing monitoring data and other information, from agencies, volunteer programs, and other sources.
- 2) Collect ambient monitoring data for the Region's watersheds, coastal confluences, and nearshore areas.
- 3) Conduct periodic detailed assessments of the Region's watersheds, groundwater basins, coastal confluences, and nearshore areas.
- 4) Utilize monitoring data and other information to maintain and update the Region's Water Quality Assessments and list of impaired waterbodies and beneficial uses.
- 5) Provide information presentations through the use of geographic information systems technology and other forms of graphic visualization.
- 6) Provide data and information dissemination services through the Internet.
- 7) Conduct periodic assessments of other programs' activities to eliminate gaps, overlaps, and duplications of effort, and utilize external information whenever possible as a component of the Ambient Monitoring Program.
- 8) Work with other monitoring programs, including volunteer programs, to develop consistent monitoring protocols and methods, quality control standards, data

management procedures, and to encourage efforts consistent with regionwide monitoring goals.

- 9) Coordinate data management activities with other programs to maximize accessibility and usability of data.

The CCAMP monitoring strategy calls for dividing the Region into five watershed rotation areas and conducting synoptic, tributary-based sampling each year in one of the areas. Over a five-year period, all of the Hydrologic Units in the Region are monitored and evaluated. In addition to the tributary-based site selection approach, additional monitoring sites are established in each rotation area to provide focused attention on watersheds and waterbodies known to have water quality impairments or other issues of interest.

The CCAMP strategy for establishing and maintaining permanent long-term monitoring sites provides a framework for trend analysis and detection of emergent water quality problems. CCAMP uses a variety of monitoring approaches to characterize water quality conditions and trends in coastal watersheds, including:

- Rapid bioassessment using benthic invertebrates
- Conventional water quality analysis
- Analysis of tissue, water, and sediment for organic chemicals and metals
- Toxicity evaluations
- Habitat assessments

To develop a broad picture of the overall health of waters in the Region, a similar baseline monitoring study design is applied in each rotation area. This provides for compatibility across the Region and allows for prioritization of problems across a relatively large spatial scale. The CCAMP strategy also allows for incorporation of watershed-specific knowledge so that questions which are narrower in focus can be addressed. For example, in watersheds where TMDL assessments are being conducted, additional information is collected as necessary to support development of the analysis. Special studies are undertaken as funding and staffing permits to further focus monitoring on questions of interest specific to individual watersheds.

Coastal Confluences monitoring is another CCAMP program component that focuses on monitoring "integrator sites" at the lower ends of rivers and creeks at their outflow to the ocean. Sampling at

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these sites is conducted continuously, rather than in a five-year rotation. These sites aid in long-term trend detection, regional priority setting, and understanding inputs to the nearshore environment.

CCAMP nearshore monitoring activities are varied. In the Monterey Bay area, CCAMP has worked with ocean dischargers to redesign and combine receiving water monitoring programs to form the Central Coast Long-term Environmental Assessment Network (CCLEAN). This program characterizes loading of organic pollutants, nutrients and pathogen indicators from discharges and river mouths to the ocean. It also documents associated nearshore conditions, including chemical concentrations in mussel tissue, and nearshore nutrient and toxic phytoplankton concentrations. The CCAMP program directs funding and other support to other marine monitoring activities, including sand crab, mussel, and sea otter tissue analysis for organic chemicals, polynuclear aromatic hydrocarbons, metals, toxic phytoplankton and specific pathogens. CCAMP staff are also working with the local research community to expand the network of instrumented moorings in nearshore areas, with particular focus on nitrate, chlorophyll, and toxic phytoplankton.

More information on the CCAMP program can be found at <http://www.swrcb.ca.gov/rwqcb3/>. The CCAMP program is conducted in coordination with the TSM and SMW monitoring programs, and satisfies Regional Board requirements for participation in the statewide SWAMP program.

V.C. ASSESSMENTS

III.C. V.C.1. BIENNIAL WATER QUALITY INVENTORY STATE WATER QUALITY INVENTORY (305(b)) REPORT

Pursuant to Section 305(b) of the Federal Clean Water Act (PL 92-500), the SWRCB is required to submit a report on the status of the State's water quality to the USEPA at least every two years. The CWA establishes a process for States to use to develop information on the quality of their water resources (see USEPA 305(b) reporting guidelines). Specific requirements for this process are also found

in Sections 106(e), 204(a), 303(d), 305(b), and 314(a) of the CWA. Section 305(b) of the CWA specifies that each state must develop a program to monitor the quality of its surface waters and prepare a report describing the status of its water quality; Section 106(e) requests that each state also include the status of ground waters of the state in the report.

Section 305(b) of PL 92-500 requires the State to prepare and submit biennially to EPA the Water Quality Inventory. This report includes: The 305(b) process is the principal means by which the USEPA, Congress, and the public evaluate whether U.S. waters meet water quality standards, progress made in maintaining and restoring water quality, and the extent of remaining problems. Water quality assessment information from California's nine Regional Boards is compiled and presented in conformance with USEPA's 305(b) reporting guidelines including (a) tabulation of a description of the general water quality of major navigable waters in-of the State during the preceding years; (b) an analysis of the extent to which significant navigable waters provide for the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water; a summary of current designated use support, individual beneficial use support, major causes and sources impacting designated beneficial uses, and associated public health concerns; and (c) an analysis of the extent to which elimination of the discharge of pollutants is being employed or will be needed; and (d) an estimate of the environmental impact, the economic, and social costs necessary to achieve the "no discharge" objective of PL 92-500, the economic and social benefits of such achievement and estimate of the date of such achievement. Recommendations as to the programs which must be taken to control them are provided, along with estimates of the cost, a brief description of water pollution control policies and programs designed to manage water quality.

Data collection and analyses already being carried out by the State in the permits, planning, facilities, monitoring and enforcement programs is utilized in preparing the reports on the quality of the waters of California. The first report was published in 1975 with subsequent reports in 1977 and 1979. The next biennial report is due in 1990. Assessment information used for compiling and reporting the 305(b) report is contained in the USEPA's Water Body System (WBS) database, structured for the

purpose of producing the 305(b) Report. The SWRCB has also developed a geographical interface to the WBS, called GeoWBS, which allows users to spatially define and relate database information.

IV.V.C.2. STATE WATER QUALITY ASSESSMENT REPORT

The State Board has been preparing "Section 305(b) Reports" since the mid 1970's. Most of these reports have been fairly general in nature, highlighting a few significant problem areas and estimating total area or stream mileage of waters statewide which were classified as "good", "medium", or "poor" quality. In 1989, the State Board began a more detailed Water Quality Assessment process to fulfill U.S. EPA reporting requirements and to provide the basis for prioritizing funding under the State's Clean Water Strategy.

The Water Quality Assessment is a computer database. It includes a table which lists water bodies of each region alphabetically by water body type (lakes, streams, ground water, etc). Initially, Regional Boards were directed to include at least all water bodies mentioned by name in their Basin Plans in the Water Quality Assessment table. Additional water bodies are to be added in future updates of the Water Quality Assessment, with the eventual goal of including all waters of the region. The 1992 Water Quality Assessment for the Central Coast Region includes approximately 400 entries.

For each water body, the Water Quality Assessment table identifies the wetland, lake, or ground water basin area or the stream mileage classified as having "good", "intermediate", "impaired", or "unknown" water quality. The table includes space for brief narrative problem descriptions. It identifies problem sources as point, nonpoint, or both. It also indicates whether the water body is included on one or more of the following federal "lists" (numbers refer to sections of the Clean Water Act):

131.11 Segments which may be affected by toxic pollutants, or segments with concentrations of toxic pollutants that warrant concern.

303(d) List of Water Quality Limited Segments where objectives or goals of the Clean Water Act are not attainable with the Best

Available Treatment/Best Control Technology.

304(M) A "mini-list" of waters not meeting State adopted numeric water quality objectives due to toxic point sources and/or nonpoint sources after implementation of Best Available Treatment/Best Control Technology.

304(S) A "short list" of waters not achieving water quality standards due to point source implementation of Best Available Treatment/Best Control Technology.

304(L) A "long list" of waters not meeting water quality goals of the Clean Water Act after implementation of Best Available Treatment/Best Control Technology due to either point sources or nonpoint source discharges.

314 A list of lake priorities for restoration.

319 A list of impaired surface water bodies from nonpoint source problems due to both toxic and nontoxic pollutants.

The information used by Regional Board staff in compiling and revising the Water Quality Assessment table includes the type of monitoring data discussed in this chapter, records of past Regional Board enforcement actions, professional judgment of Regional Board scientists and engineers, and public comments.

The Water Quality Assessment database also includes the capability to print out a more detailed "Fact Sheet" for each water body in the table. Fact Sheets can include longer problem descriptions, information on threatened or impaired beneficial uses, and summaries of current and projected remedial actions by the State Board and/or the Regional Board. Due to time constraints and, in many cases, lack of information, detailed Fact Sheets have not been prepared for all water bodies in the Central Coast Region's Water Quality Assessment table. Additional Fact Sheets will be added during the ongoing Water Quality Assessment update process.

The Water Quality Assessments adopted by the nine Regional Boards were combined into a statewide Water Quality Assessment which was formally adopted by the State Board. The State Board is using the system to print out statewide "reports", statistical

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~~tables, graphs, and charts summarizing the total numbers or percentages of water bodies affected by different types of water quality problems. The State Board also uses information in the Water Quality Assessment to prioritize proposals affecting specific water bodies.~~

The Water Quality Assessment (WQA) report is a biennial compilation of water quality information similar to the biennial Water Quality Inventory (305(b)) report; however, the WQA report contains specific information for individual water bodies of the region rather than generalized summaries for water-body types of the region. Specifically, the WQA categorizes the water quality of each water body by reporting the degree to which beneficial uses are supported (see Basin Plan Chapter 2 for beneficial uses). The levels of beneficial use support are described as: fully supporting, fully supporting but threatened, partially supporting, not supporting, and not assessed. In addition to a description of the level of beneficial use support for each water body, the WQA contains narrative assessment (comments) for selected water bodies of the Region and identifies water bodies included on the Federal 303(d) "list" (numbers refer to sections of the Clean Water Act). The 303(d) list is a list of Water Quality Limited Segments where objectives or goals of the Clean Water Act are not attainable through standard regulatory controls. States are required to prioritize these water bodies for Total Maximum Daily Load (TMDL) development.

As with the 305(b) report, the information used by Regional Board staff in compiling and revising the WQA includes the type of monitoring data discussed in this chapter, records of past Regional Board enforcement actions, professional judgment of Regional Board scientists and engineers, and public comment.

The Water Quality Assessments adopted by the nine Regional Boards are combined into a statewide WQA report that is formally adopted by the State Board. The State Board uses information contained in the report to develop statistical reports summarizing the total number or percentage of water bodies affected by different types of water quality problems. The State Board also uses Water Quality Assessment information to prioritize proposals affecting specific water bodies. WQA information is stored in the GeoWBS database system.

V.C.3. CENTRAL COAST AMBIENT MONITORING PROGRAM (CCAMP) ASSESSMENTS

Water quality data collected in the CCAMP program is compiled and analyzed to produce watershed assessment reports for the Region. Reports are generated for both surface waters and groundwaters in each watershed, following the CCAMP 5-year rotation monitoring schedule discussed above.

Surface water assessments

Surface water assessments are developed using data collected through the CCAMP program and other available information sources, including water quality data from the California Department of Health Services (DHS), United States Geological Survey (USGS), Department of Fish and Game (DFG), Department of Pesticide Regulation (DPR), Toxic Substance Monitoring (TSM) program, National Pollutant Discharge Elimination System (NPDES) discharge data, county data, city data, relevant water quality reports, and any other available literature. Water quality data is also combined with hydrogeomorphic data, land use data, etc. to develop watershed scale assessments, which are, in turn, used to update the 305(b) report and support TMDL development.

Groundwater assessments

CCAMP does not actively collect groundwater data, but uses existing sources of data and other available water quality information to develop assessments of groundwater conditions. Data and other information are compiled from the DHS, USGS, California Department of Water Resources (DWR), DPR, and city or county information sources.

Data for both surface and groundwater assessments are evaluated for pollutants of concern, water quality standards exceedances, pollutant levels that warrant attention, beneficial use impairment, spatial and temporal trends, data gaps, and other pertinent information. General evaluations of relationships between surface water and groundwater pollutants are also included in the assessments. Assessment information is then used to develop recommendations for action, to assess future research and monitoring needs, to update the 305(b) report and support

TMDL development, and to support permit review activities.

Watershed assessment reports and water quality data are available on the CCAMP website (see <http://www.swrcb.ca.gov/rwqcb3/>).

~~V. REGIONAL WATER QUALITY CONTROL BOARD PROGRAM TASKS~~

~~V.A. COMPLIANCE MONITORING~~

~~This task determines permit compliance, validates self-monitoring reports, checks receiving water standards compliance, and provides data for enforcement actions. Data obtained are added to the water quality supply data for regulation, enforcement, planning, and facilities development activities. Discharger compliance monitoring and enforcement actions are the responsibility of, and will normally be carried out wholly by, the Regional Board staff. Standards Compliance Monitoring will be coordinated by the State Board and use data available from other program tasks.~~

~~The scope of the Waste Discharger Compliance Monitoring Program for the basin will be dependent on the number and complexity of Waste Discharger Requirements (NPDES and other Permits) issued by the Regional Board. Waste discharge requirements may or may not include a specific discharger self-monitoring and reporting requirement on the effluent and receiving waters.~~

~~This program includes a control procedure whereby each discharger is periodically visited by Regional Board personnel on both an announced and an unannounced "Facility Inspection" basis. The intent of announced visits is to work with the discharger through personal contact and communication to review his procedures in order to assure quality control. The intent of the unannounced inspections is to survey the operation; inspect the discharge area; and collect, check, or reference samples.~~

~~V.B. SELF-MONITORING REPORT REVIEW~~

~~Discharger self-monitoring reports generated as a result of permits and waste discharge requirements are collected and reviewed by the Regional Board for obvious errors or omissions and entered into the data bank for checking. Significant reports of noncompliance are made immediately upon detection. Other data desired by the Regional or State Board will be rendered on a routine basis. Self-monitoring reports are normally submitted by the discharger on a monthly or quarterly basis as required by the permit conditions.~~

~~V.C. COMPLAINT INVESTIGATION~~

~~The Complaint Monitoring task involves investigation of complaints of citizens and public or governmental agencies on the discharge of pollutants or creation of nuisance conditions. It is a Regional Board responsibility which includes preparation of reports, letters, or taking other follow up actions to document observed conditions and to inform the State Board and complainant and discharger of the observed conditions.~~

~~V.D. AERIAL SURVEILLANCE~~

~~Aerial surveillance is used primarily to gather photographic records of discharges and water quality conditions and to observe conditions at solid waste disposal sites in the Region. Aerial surveillance is particularly effective because of the overall view of a facility that is obtained and because many facilities can be observed in a short period of time.~~

VI. SPECIAL STUDIES

V.E.VI.A. NONPOINT SOURCE INVESTIGATIONS

The objective in this task is to (a) identify location of the sources of nonpoint pollutants; (b) develop

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information on the quantity, strength, character, and variability of nonpoint source pollutants; (c) evaluate impact on receiving water quality and biota; (d) provide information useful in management of nonpoint source pollution; and (e) monitor results of any control plan. Investigations ~~will be~~ are typically undertaken ~~on a statewide priority basis~~ through local agency and watershed group efforts, funded by Federal Clean Water Act grants and other sources.

~~Table 6.2 lists each water body, the constituent needing sampling, and the reason it should be sampled. The Regional Board urgently requests the State Board to make money available for intensive surveys.~~

V.F.VI.B. INTENSIVE SURVEYS

~~Special studies and i~~ Intensive monitoring surveys are conducted to provide obtain detailed information about a specific water quality problem which, in turn, can be used to ~~-data to locate and-~~ evaluate violations of receiving water standards and make-determine waste load allocations. They-These studies usually involve are usually- localized, intermittent sampling at a higher than normal frequency. These surveys are specially designed to evaluate problems in W ~~water~~ Quality ~~class-Limited S~~ segments, areas of special biological significance Water Quality Protection Areas (formerly known as Areas of Special Biological Significance), or hydrologic units requiring sampling in addition to routine monitoring programs. Surveys are repeated at appropriate intervals depending on parameters involved, variability of conditions, and changes in hydrologic or effluent regimes. Results from these special studies may be used for Total Maximum Daily Load (TMDL) development in response to 303(d) listed Water Quality Limited Segments.

~~Intensive surveys are needed for several water bodies. The data are needed for one or more of the following reasons:~~

- ~~a. A water quality problem is suspected, however, little data is available to substantiate the existence or degree of a problem;~~
- ~~b. A water quality screening is needed to verify the Regional Board's judgment of the water quality status; or,~~
- ~~c. A water body is suspected to be water quality limited.~~